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NEWS AND PRACTICAL INFORMATION ABOUT AUTOMOBILES

AUTOMOBILE OWNER MAY ECONOMIZE IN TIME AND MONEY BY ADOPTING SHORT CUTS IN PERFORMING GARAGE WORK

(By special permission from Motor Life.)

In all walks of life and in all businesses anything which can lead to a lessening of trouble and a reduction of expenses is always welcome. Never was this fact more emphasized than in the motoring world. There are countless ways in which the private owner of a motor car may reduce his upkeep expenses, and many of them lie in the small details of his garage work. Several of these short cuts are illustrated on this page, and the motorist will find them in every instance not merely a short cut in expenses but one in time, worry and arduous work.

Illustration No. 1 shows a simple way of putting back wires which have been removed from a magneto. In replacing them there is always a possibility of time being wasted by the fact that the high tension wires must be attached to their proper terminals, and so must the low tension. Of course, wires and the terminals may be numbered, but a far simpler way is to link the wires lightly together with a string and progress from left to right as shown. Probably a low tension wire will be first, and then there will be the set of high tension wires and then another low tension.

As useful and as simple as the foregoing is the motor stethoscope pictured in No. 2. It consists of a simple telephone receiver, to one end of which is attached a long iron rod which touches the motor at one end, the other being soldered to the diaphragm. The vibrations pass through the motor up along the rod to the receiving diaphragm and thus to the ear drum.

One of the tasks about a motor which annoys and puzzles many amateur motorists is the removal of piston rings. That this may be easily done is shown by No. 3, where the rings are being easily removed by the use of emery cloth or any other strong fabric. As shown in the drawing, two pieces of cloth are used, one being slipped under the edge of each ring, and then they are folded over and used to expand the ring just enough so that they may be removed. With equal celerity and ease the rings may be replaced, as is shown in No. 4, by the use of old alarm clock springs, each about five inches long.

Adjusting Piston Rings

Another objection that novices have in dealing with piston rings is that in lapping them they are liable to push the piston too far into the cylinder, causing it to stick or break a ring, or both. This difficulty may be overcome by clamping the ring between two wood discs slightly less in diameter than the cylinder. Illustration No. 5 shows how the rings are arranged between the discs, rod being slipped through and the nuts at each end tightened. For the lapping process a handle on one end of the rod is used.

During winter motor driving with a lap robe is always troublesome, because it gets mixed up with the pedals. In Figure No. 6 we show how this difficulty may be overcome by making a stiff wire guard to hold the robe away from the feet and the pedals. Ordinary 5-16 inch wire will do, and it is bent as shown and has an eye in each end of it through which a bolt passes to fasten to the floor.

A screw driver is customarily used for short circuiting the spark plug, but a far more easy method can be employed by the use of a chain apparatus, shown in Figure No. 7. Any sort of a chain may be used, and insulation is effected by fastening it to a wooden handle.

Illustration No. 8 shows that when an axle crush rod interferes with a jack the difficulty may be overcome very neatly by using the U-shaped member shown. This consists of a piece of ⅝-inch flat stock, bent in the manner illustrated, and it is placed between the head of the jack and the axle.

To Wash the Car

Careful and thorough car washing requires that the light be good, which means, of course, that the illuminating arrangement must be adjustable. Illustrated herewith in Figure No. 9 is a method which has been found successful. The electric bulbs are placed on a wooden bar about ten feet long and eight inches wide, which is painted white to act as a reflector. The bar is supported on two arms, which are fastened to the ceiling beams with a single carriage bolt through arm and beam, making a hinge. The lights can be let down when in use and pulled out of the way when not required.

Compression troubles spell anathema to the novice, but it need not be so if he employs a compression tester, which is really necessary for actually determining the condition of valves and pistons as regards their tightness. A cheap but satisfactory one may be made by combining a tire gauge with a spark plug shell. Figure No. 10 shows how the gauge may be fastened to the shell by pouring in babbitt or lead, or a special reducing nipple may be used. The gauge, of course, is placed in the spark plug hole when a cylinder is to be tested. A weak cylinder can be readily indicated, even if the normal compression in pounds is not known, by the fact that it will register less than the others. The use of this device is very important, and it should be employed whenever any irregularity is noted in the operation of the motor. Leaky valves, pistons and valve stem guides may cause a miss or a jerky action that ordinarily would be blamed on the carburetor or ignition.

Valve Spring Remover

There are many sorts of valve spring removers, but the simplest one is by far the single piece of metal illustrated in Figure No. 11. Its form is clearly shown, and it is put in place between the top of the push rod guide and the valve spring seat when the valve is open. Then a half turn of the motor closes the valve and leaves the key free.

One of the troubles in a great many small garages is that there is no place provided for such things as grease, graphite and oil containers, which all repair men and owners should have within convenient reach. Figure No. 12 shows a tin container with pan for white lead, shellac and graphite and oil, and on the other side of the division a large compartment for grease. This container will prove most useful, far more so than at first thought.

Even if drawers in the cupboards contain nothing but cheap tools and repairing devices, no man wishes them to be stolen, and to prevent this the device shown in Figure No. 13 has been used by many owners. Wooden bars are arranged at the outside of the tiers and the bars hang free of the drawers when not locked. Locking is effected by bringing the swinging bars together at the bottom and fastening the ends with a padlock.

An Automatic Door

In order to keep unwelcome visitors out of repair shop and garage it is necessary to have the doors closed at all times, but there is one big difficulty—when a car is driven out the door is left open until somebody thinks to close it. A door that shuts automatically when the car leaves is shown in Figure No. 14. The door is closed by a weight in the ordinary fashion, and when opened the full width a hook automatically locks it in this position. When a car passes through a doorway this hook is disengaged by the front and rear wheels passing over a spring plate in the floor. Each time a wheel runs over the plate it is depressed by means of a cable and pulleys that release the hook. When the hook is raised the first time the door moves only about an inch, and it is not until the second time that the door is permitted to roll closed. This feature prevents the door from closing on a car half way out and is accomplished by cutting two notches close together in a plate on a door which the hook engages.

Illustration No. 15 shows how an old broken down ceiling washer has been made to give better service than it did when it was new by the simple expedient of attaching a rubber hose in proper fashion. Instead of the hose merely running from the end of the washer on to the floor it goes back along the washer arm to the center and forms a flexible joint between washer and ceiling. A board stop extends down from the ceiling and prevents the arm from being turned around and around, which would result in twisting the hose to pieces.

A simple method of compressing piston rings when inserting the pistons in a cylinder with detachable head is to use a flexible wire hoop, as shown in Figure No. 16. The wire is fastened to the cylinder at one end and the other is pulled tight, thus compressing the rings.

A quick acting jack can be homemade of a wooden stand and a long lever pivoted to it, the short engaging the car axle or frame. The jack shown in Figure No. 17 can be adjusted to three different heights by changing the position of the pivot pin.

There are many short cuts which are so simple in construction and use that not even an illustration is necessary. Many little things can be got for almost nothing which will greatly help the garage man in his work with his car. Take, for instance, a small magnet, which is a great time saver for picking up screws and other small parts which have dropped into the mud pan. An ordinary horseshoe magnet which may be bought for only a few cents in any hardware store is sufficient, or an excellent one can be made from an old file which can be charged by the apparatus used for charging magneto magnets.

Then, again, for attaching spring bolts a screw jack between spring and frame will be found a great time saver, as it allows a rapid alignment of the bolt holes. Such a jack consists of two members with right and left threads which are joined by means of a nut.

Electric Pilot Light

A great many motorists complain of the wet floor which they think indispensable during car washing time. What really amounts, however, to a dry floor at this time can be obtained by placing a wooden grating on top of the cement surface of the wash rack. This grating is made of slats of wood ¾x1½ inches, laid on edge and separated by spaces one-half an inch wide, placed at intervals of 16 inches. These spaces are 4 inches long.

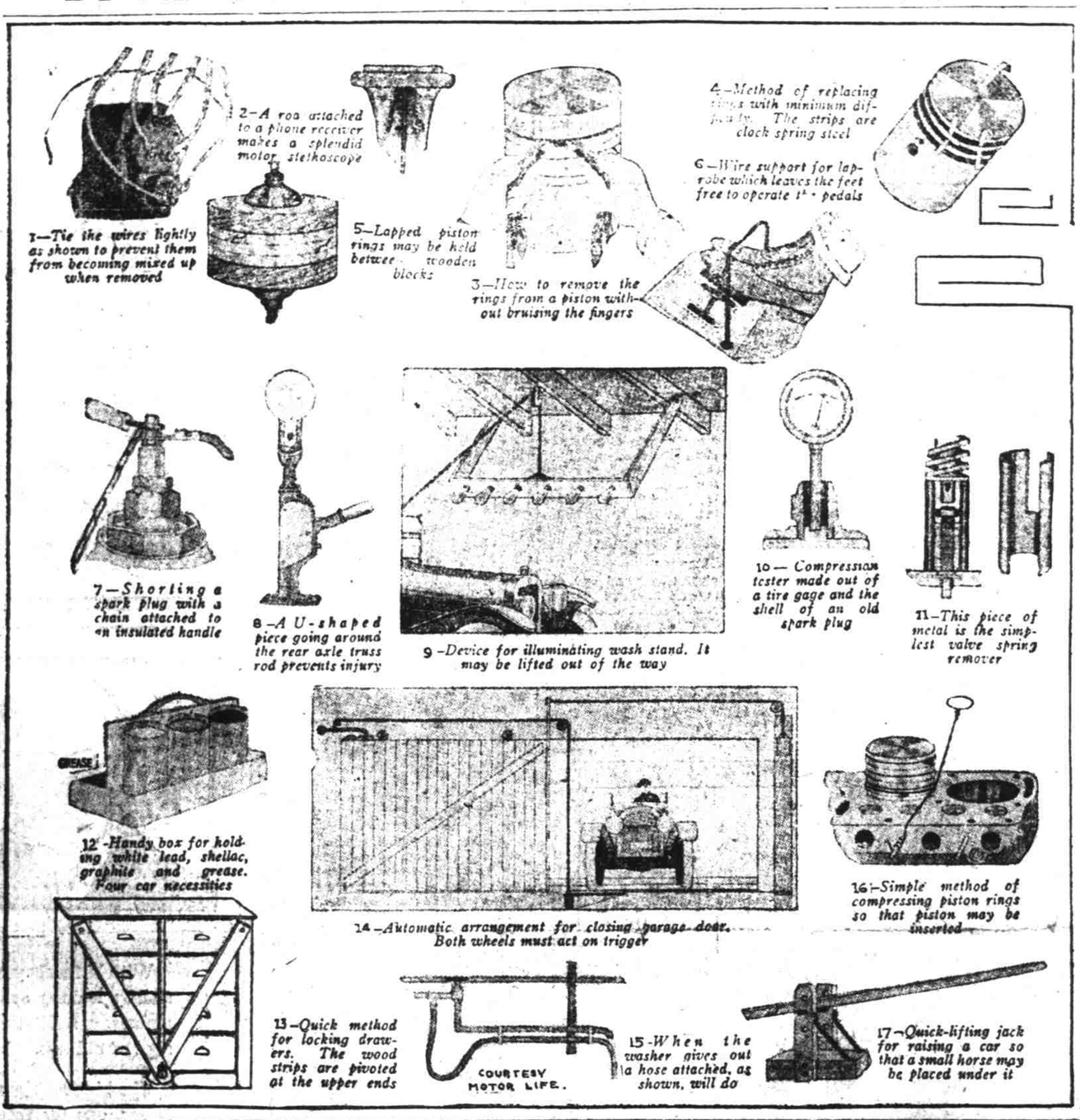
A pilot light to show whether the current is on or not is a worth while economy on storage batteries charging circuit, electric vulcanizer circuit and the like. Without the pilot light these is always danger that the circuit may be closed when it should be open, and the light indicates this. Any small candle power bulb of correct voltage may be used, and it is placed between the two wires of the circuit; in other words, it is connected in parallel with the device, whatever it happens to be.

Usually the private owner of a car finds the transfor of oil from barrel storage tank a very clumsy operation. Trouble along this line can be avoided and the oil delivered from barrel to tank in a very short time by air pressure. The apparatus consists of a pipe which is inserted through the bung and reaches to the bottom of the barrel. Then the air pressure is utilized to force the oil up through this pipe into the storage tank. Air enters through the side of the bung plug and passes into the barrel through the clearance space between the plug and the delivery pipe. The bung plug is about eight inches long, is tapered so that its diameter increases from one and a half inches at one end to three inches at the other, and is provided with a fine thread, sixteen to the inch, so that it may be readily screwed into any bunghole.

In attaching this apparatus the first step is to put in the bung, and there is a handle about one foot long to aid in this, sticking out from one side. Then the delivery pipe is inserted until its end touches the other side of the barrel, and the packing gland, which makes a tight joint between it and the delivery tube, is screwed down tight. A flexible metal tube ¾ inch in diameter runs from the end of the delivery pipe to the oil storage tank. A better idea, however, is to have a flexible pipe connect with a common pipe which runs to all tanks and have branches provided with valves running to each tank. To fill any given tank it is merely necessary to open a desired valve.

When chipping in steel, rough bronze or wrought iron the work will be greatly facilitated and the tool made to act as if much sharper if the edge is frequently rubbed on an oiled soap pad of waste or rag, and the heavier the oil the better the result.

When the edge of a cold chisel breaks off because it is too hard it is not wise to soften it, but grind it back to the end of the fracture, where the temper usually will be found about right for all around work. Incidentally, many chisels are softened by too hasty grinding on an emery wheel. On the other hand, an over-hard chisel may have the temper slightly drawn by hard grinding in careful hands. It should be quenched in water as soon as the color shows about right.



BOOSTERS URGE COOPERATION WITH WAR OFFICE IN ROAD BUILDING

Representative men identified with highway improvement throughout the United States met at the Automobile Club of America in New York June 8, and adopted a set of resolutions urging the cooperation of the state highway departments with the war department for the purpose of determining officially the highway resources of the country with regard to their military significance. The resolutions follow:

Whereas, The great increase in cost of building and maintaining roads and streets makes it necessary now to bring home to the public and to the representatives of the public, on whom devolves the road and street work of the country, the value of the country's highways both for commercial and for military purposes; therefore, be it

Resolved, That it is the sense of this meeting that the highway departments of the several states should cooperate with the war department of the United States in determining the highways of each state that are important from a military standpoint, and also the requirements which such highways should meet; and, be it further

Resolved, That it is the sense of this meeting that each state highway department should at once prepare a report on the transportation of agricultural and industrial products; and be it further

Resolved, That is is the sense of this meeting that the governor of each state should file with the proper committee of the advisory council on national defense, or with any body that may succeed to the powers and duties now vested in the said council, a memorial requesting that the railroads be not permitted to place an embargo upon the transportation of materials, machinery or equipment for use in the construction of roads of military value or required for the transportation of foodstuffs and other necessities, but that this class of freight be put on the preferred list.

SUPPLY OF GASOLINE MAY BE EXHAUSTED

According to reports from the Oklahoma oil fields, the gasoline production of 1917 will not be sufficient to last through the year, unless radical conservation measures are taken. Dr Burton of the Standard Oil Company told members of the Society of Automobile Engineers recently, that as close as could be estimated, 1917 production would reach 2,500,000,000 gallons, of which American automobiles would use 2,000,000,000, leaving 500,000,000 gallons, for use by military trucks, to be exported to the Allies.

"The supply of oil can not be increased," said Dr. Burton. "Either strict measures must be taken by the government or double the value extracted from the oil."

SERVICE FIRST AND LAST

A Ford automobile owned by the Honolulu Construction & Draying company has run 40,253 miles in the two years since it was purchased and is stil going strong, according to J. J. Belser, manager of the company.

It has been used by the superintendent of the outside districts and now that the company has bought a new car it has been turned into a truck for the transportation of even heavier loads.

The company has also recently purchased two large trucks—a White and a Packard. As they have very wide wheels it is expected that they will improve the roads by rolling them down rather than injuring them.

OX CART GIVES WAY TO AUTO IN EASTERN WORLD

The American automobile made big gains in the Far East in 1916, according to D. E. Casey of the bureau of foreign and domestic commerce in the New York custom house. The governments representative said the Oriental was waking up to the pleasures of motoring, and also to the advantages o fthe American motor car.

The statement showed that last year the automobile manufacturers of this country exported to Asia 6,624 cars valued at nearly $8,000,000, almost thre times as many as in the previous year and five times as many as in 1914.

In Hongkong and other Chinese cities strenuous efforts are being made to increase the mileage of automobile roads, and every mile of new road adds to the number of prospective purchasers of automobiles. Formerly most of the cars in China were owned by companies and were for public hire, but now individuals, both Europeans and natives, are buying automobiles for their own use.

Japan Alone Shows Slump in Buying

Japan, it was stated, was the only country in the Orient buying fewer motor cars from this country in 1916. The Japanese are now manufacturing their own cars to some extent and at prices which serious cut into the business of American exporters.

"At the close of 1916," Mr. Casey said, "there were 105 cars in use on the Island of Hongkong, practically all of which are of American makes. The city of Shanghai has issued 559 automobile licenses, which is about 25 per cent more than the number issued in 1915. Nearly all automobiles in China are used in the cities which have a large European population. As yet they have not been extensively used in the interior.

"The Straits settlements offer an other attractive field for the American automobile manufacturer. There are about 2500 miles of excellent road in the Malay Peninsula, and the people have a greater buying power than ever before on account of the high price of tin and rubber. In 1914 British manufacturers sold care to the value of over $440,000, while the United States shipped about $330,000 worth. In 1915, however, we exported to Malaya more than twice as many cars as did Great Britain.

Chinese Merchants Aid in Development

"Much of the business there is done with the wealthy Chinese, who are not content in many cases with owning one car when once they take to motoring. Planters and miners use automobiles to some extent, but the Chinese merchants are at present the most important element of the trade. Many new tracts of land are now being opened up and motor traction seems to have a bright future there, althoug hthe railway system in the more popular districts are excellent.

"The market in Japan is small, since only twenty-six cars, valued at $30,595, were imported in 1915. Of this number ten were imported from the United States and eight from European countries. In 1914 seventy-six cars were imported, having a total value of $106,420. A taxicab company in Tokio is now operating forty-two cars from nine stands, and carries about 700 passengers daily. All of these cars are of American make and were furnished by an American firm in Japan.

Java Now Offers Good Opportunities

"Java offers another good opportunity for automobile manufacturers. In 1916 that country imported 2386 cars, of which 2251 came from the United States, forty-seven from the Netherlands and sixty-three from Italy. This is an increase of about 400 per cent over 1915, when only 565 cars altogether were imported.

"It is only within the last few years that the automobile has been of any commercial importance in India."

Mr. Casey said the department of commerce considered the Far Eastern markets sufficiently important to warrant sending a representative there to investigate for the benefit of American manufacturers. He added that the local office now had on file lists of dealers in automobiles and accessories in the various countries of the Orient, which may be studied upon request.

STEARNS AUTOS DESIGNED FOR MEN WHO KNOW

The 15-30 Retains Same Qualities of Sturdiness Which Mark Heavier Models

As early as 1909 the F. B. Stearns company realized that the rapidly increasing popularity of the motor car was destined to divert the trend of designing away from the large and heavy car—that the car of the future would have to be better adapted to general use and more economical, says J. K. McAlpine, sales manager of the Schuman Carriage company.

Then began the actual development of the Stearns-Knight of today. The first step was the adoption of the Knight type or sleeve valve engine in 1911, and marked the introduction of the Knight motored car in this country. Stearns' next move was the perfection of the new Stearns-Knight combination, offering as the initial result the "Stearns-Knight light four," the first car of its kind and quality to sell under $2,000.

This car, with added refinements and improvements is now in its third season. When first introduced its wonderfully silent power, its easy riding and handling qualities as well as great economy in upkeep and operation gained for it unrivalled popularity. These same qualities are present in a higher degree—and even greater perfection in the new model Stearns-Knight four.

And lastly, as a fitting tribute to the final development and perfection of Stearns chassis, comes the Stearns-Knight eight cylinder engine.

In design it represents the application of the famous sleeve valve principle to a "V" type motor of Stearns' own design. In construction it is distinctive in an assembly of one-third less parts than any other type engine of eight cylinders. In performance it possesses qualities decidedly its own and impossible in any other combination regardless of the number of cylinders or type of power plant.

Both the Stearns-Knight four and Stearns-Knight eight chassis mount an unusually attractive line of bodies, including seven-passenger touring and four-passenger sport roadster bodies on the eight-cylinder chassis, also five-passenger touring and four-passenger sport roadster bodies on the four-cylinder chassis.

The Clover Leaf or four-passenger roadsters feature the divided front seat and a seat accommodating two in the rear. The upholstery in both models is of genuine dull finished leather with deep springs and hair. The seating arrangement affords the maximum comfort and convenience as well as that ease of conversation distinctive of the "chummy" roadster type.

The prices range from $1,700 for the four-cylinder line to $2,500 for the eight-cylinder line, delivered in Honolulu.

ONLY ONE WAY TO FLY FLAG ON MOTOR CAR TO SHOW LOYALTY

Every motorist should display the Stars and Stripes on the motor car. But there is a right and a wrong way to carry the flag. There should be but one flag of any one kind on the car, and that flag should be on the front of the machine. It should never be placed on the sides or the rear.

Many motorists have removed the flag from its standard and tacked it on the rear of the car body. Others stretch large flags over the hood. Still others drape the flag over the tire carriers or hang it on the sides of the car. The flag should not be used in the closed car windows or inside the headlights. Only one flag is necessary—and that one should be on the radiator.

The flag never appears at its best advantage except when it is floating from its standard in an upright position and in the most conspicuous place that can be obtained for it. That is why the flag is always carried on the stern and main mast of the battleship. Moreover, it must always be in plain sight in order that it may be defended from insult or injury.

All seeming rudeness toward the flag results from thoughtlessness or ignorance.

Do not allow a frayed, soiled or faded emblem to float from your car when ten or fifteen cents will replace it. In other words, exercise fair play towards the Stars and Stripes, that they may ever appear at the best advantage and command all the respect that is their due.

If you are carrying the flags of the Allied nations on the front of your car, see that the United States flag is slightly larger than the others. With all due respect to the flags of our Allies, our flag, the Stars and Stripes, should shine preeminent, here in its beloved land.